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IN THE CLAIMS:

Please amend the claims as follows:

1/ A process chamber for processing a substrate in a process gas and reducing emissions of hazardous gas to the environment, the process chamber [gas treatment apparatus for reducing a hazardous gas content of an effluent from a process chamber, the gas treatment apparatus] comprising:

(a) a support capable of supporting the substrate;

(b) a gas distributor capable of introducing process gas into the process chamber;

(c) a gas activator capable of activating the process gas to perform a process in the process chamber thereby forming effluent containing hazardous gas;

(d) [(a)] an exhaust tube through which the effluent [from the process chamber] may be flowed, the exhaust tube having an internal flow surface that is substantially absent projections or recesses that alter the effluent flow path; and

(e) [(b)] a microwave energy applicator to couple microwaves to the effluent flowing through the exhaust tube to reduce the hazardous gas content of the effluent.

2/ The process chamber [gas treatment apparatus] of claim 1 wherein the exhaust tube comprises a length that is sufficiently long to reduce the hazardous gas content of a continuous stream of effluent flowing through the exhaust tube without recirculating the effluent in the exhaust tube.

3/ The process chamber [gas treatment apparatus] of claim 1 wherein the exhaust tube comprises a length that is sufficiently long to provide a residence

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time of the effluent flowing through the exhaust tube that is at least about 0.01 seconds.

4. The process chamber [gas treatment apparatus] of claim 1 wherein the internal flow surface is adapted to provide a laminar flow of effluent through the exhaust tube.

5. The process chamber [gas treatment apparatus] of claim 4 wherein the exhaust tube comprises a cylinder and wherein the internal flow surface is parallel to the direction of the flow of the effluent through the exhaust tube.

6. The process chamber [gas treatment apparatus] of claim 1 further comprising a reagent gas mixer capable of mixing reagent gas with the effluent to further reduce the hazardous gas content of the effluent.

7. The process chamber [gas treatment apparatus] of claim 1 wherein the exhaust tube comprises monocrystalline sapphire.

8. The process chamber [gas treatment apparatus] of claim 1 further comprising an RF energy applicator to couple RF energy to the effluent in the exhaust tube.

9. The process chamber [gas treatment apparatus] of claim 1 wherein the exhaust tube comprises a distributor plate at an inlet of the exhaust tube, the distributor plate having holes adapted to direct effluent preferentially along the internal flow surface of the exhaust tube.

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24. A process chamber for processing a substrate in a process gas and reducing emissions of hazardous gas to the environment, the process chamber comprising:

- (a) a support capable of supporting the substrate;
- (b) a gas distributor capable of introducing process gas into the process chamber;
- (c) a gas activator capable of activating the process gas to process the substrate thereby forming effluent containing hazardous gas; [and]
- (d) an exhaust tube comprising monocrystalline sapphire through which effluent from the process chamber may be flowed; and
- (e) a microwave energy applicator adapted to couple microwaves to the effluent flowing through the exhaust tube to reduce the hazardous gas content of the effluent.

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C2 11 31. The process chamber [gas treatment apparatus] of claim 1 wherein the microwave energy applicator comprises a waveguide for coupling microwaves to the effluent in the exhaust tube.

10 32. The process chamber [gas treatment apparatus] of claim 3 wherein the RF energy applicator comprises facing electrodes or an inductor coil.

REMARKS

By this amendment, claims 1-12, 14, 15 and 24-36 are pending in the application. Claims 1-9, 24, 31 and 32 have been amended. The claim amendments are supported by the specification, and no new matter is added.